

BEHAVIOURAL SCIENCES USED BY THE UNITED NATIONS TO ACHIEVE THE SUSTAINABLE DEVELOPMENT GOALS: A ROADMAP AND SOME STOP SIGNS

Anne van Aaken

Institute of Law and Economics, Faculty of Law, University of Hamburg,
Alsterterrasse 1, 2nd floor, D-20354 Hamburg, Germany.

Email: anne.van.aaken@uni-hamburg.de

ORCID: <https://orcid.org/0000-0003-3058-314X>

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ABSTRACT

The United Nations (UN) and several UN Agencies have started to use behavioural sciences in order to achieve their policy goals, including for achieving the Sustainable Development Goals (SDG). While it is appreciated that insights into actual behavior inform the policymaking of international actors, they also raise scientific and normative considerations that warrant caution. First, for those considerations it matters, who the acting and the targeted actors are: behavioural interventions come in many facets and warrant a differentiated view – a finely built roadmap is thus desirable. Second, there are concerns about the internal and external validity of experimental research on which behavioural sciences largely, but not solely, draws. Third, taking a differentiated view on behavioral sciences also allows for a more finely grained view on normative concerns underlying the operations of the United Nations in environmental policy. This contribution spells out those considerations while still advocating for the approach as such.

Keywords: Sustainable Development Goals; Behavioral Sciences; Law and Behaviour; United Nations; International Environmental Law and Policy

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1. INTRODUCTION

The United Nations (UN) as well as specialized UN Agencies are turning behavioural. The UN clearly states that behavioural science should be included in its work to achieve the Sustainable Development Goals (SDGs).¹ In that, it follows the World Bank which devoted its World Development Report 2015, “Mind, Society, and Behavior”, to behavioural insights in order to promote development.² Let me stress from the outset that I deem this development necessary. It is highly promising that more realistic behavioural assumptions and insights underpin policies of international organizations, their member states, and international law.³ Still, when behavioural insights, especially nudges, are used to foster sustainable development through the SDGs, careful consideration of relevant scientific and normative limitations are needed to uphold legitimacy and accountability of those regulatory tools. A nudge is ‘an aspect of choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives’.⁴ International nudges are regulatory tools used by

¹ Guterres, A., ‘UN Secretary-General, UN Guidance on Behavioural Science’ (2021), p. 1, <https://www.uninnovation.network/assets/BeSci/UN_Behavioural_Science_Report_2021.pdf>: ‘Behavioural science is a critical tool for the UN to progress on its mandate. It can contribute to combating poverty, improving public health and safety, preventing and managing crisis, promoting gender and economic equality, tackling corruption, strengthening peacebuilding and all the SDGs. At the same time, it is being used to make the public sector more efficient and holds potential in this area for the UN. UN entities are strongly encouraged to invest in behavioural science and work in a connected and collaborative interagency community to realise its tremendous potential to achieve impact.’ See also Adam Oliver, *The Origins of Behavioural Public Policy* (Cambridge University Press 2017) 108. The UN defines behavioral science as follows: The term behavioural science as understood by the UN is broadly defined by António Guterres (UN Secretary-General): “Behavioural science refers to an evidence-based understanding of how people actually behave, make decisions and respond to programmes, policies, and incentives.” UN Guidance on Behavioural Science, (2021) 1. See also Michael Hallsworth, ‘A Manifesto for Applying Behavioural Science’ (2023) 7 *Nature Human Behaviour* 310, 311: “In its broadest sense, [behavioural science is] a discipline that uses scientific methods to generate and test theories that explain and predict the behaviour of individuals, groups and populations. ... Behavioural science is different from ‘the behavioural sciences’, which refers to a broader group of any scientific disciplines that study behaviour.”

² World Bank, World Development Report (2015), available at: <<https://www.worldbank.org/content/dam/Worldbank/Publications/WDR/WDR%202015/WDR-2015-Full-Report.pdf>>.

³ Behavioural sciences, especially behavioural economics, has been applied to international law since almost ten years with rapidly growing literature, see Galbraith, J., ‘Treaty Options: Towards a Behavioral Understanding of Treaty Design’ (2013) 53 *Virginia Journal of International Law* 309-364; Anne van Aaken, ‘Behavioral International Law and Economics’ (2014) 55 *Harvard International Law Journal* 421-81; Broude, T., ‘Behavioral International Law’ (2015) 163 *University of Pennsylvania Law Review* 1099-1157; Anne van Aaken & Tomer Broude (eds.), *The Psychology of International Law, Special Issue*, (2019) 30(4) *European Journal of International Law*; Harlan Grant Cohen and Timothy Meyer (eds.), *International Law as Behavior* (Cambridge University Press 2021), in the environmental field, see Anne van Aaken, ‘Behavioral Aspects of the International Law of Global Public Goods and Common Pool Resources’ (2018) 112 *American Journal of International Law* 67-79.

⁴ Richard H. Thaler & Cass R. Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (Yale University Press 2008) 6. For more on paternalistic nudges, Cass Sunstein, *Why Nudge? The Politics of Libertarian Paternalism* (Yale University Press 2014). For a critique of the

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international actors to influence the behaviour of other actors, 'either by nudging individuals who are vested with political power directly, or by nudging the public at large, which in turn influences policy-makers indirectly'.⁵ Both give rise to questions of legitimacy of using behavioural sciences and matter for the accountability and responsibility of the (international) users of behavioural sciences.

This article's aim is to show the many ways of using behavioral insights on the international plane for fostering the SDGs (the roadmap). Secondly, it aims to raise awareness of potential scientific and legal limitations for behavioural interventions, especially nudges (the stop signs). Thus, this article proceeds as follows. At the outset, it maps the relevant actors and applications since this allows for a differentiated view on scientific and normative concerns (2.). It then draws attention to stop signs to be considered when using behavioural sciences in the international realm (3.): first, a cursory discussion on validity and replication problems of experimental research underpinning much of the research background of the behavioural turn (3.1.) and second, normative considerations to be deliberated upon when using behavioural insights (3.2.). The last part concludes (4.).

2. A ROADMAP: ACTORS AND NORMS

Different actors are involved when using behavioural insights to foster sustainable development. The first category of actors concerns those using behavioural insights for their policy goals. The actors can be divided between the national (or local) and the international level. At the national level, regulators on all level of government can use behavioural tools which are informed by international policies or norms. On the international level, it can be international negotiators and diplomats who use behavioural insights in negotiations,⁶ be it with other states, or be it with their home states.⁷ It can also be international organizations that use behavioural insights for the functioning of their own organization or to implement policies either directly or being used by the states as intermediaries. Indeed, the use of behavioural insights are often developed and implemented by so-called "behavioural units" of international organizations. Prominent examples with such units are *inter alia* the Organization for Economic Cooperation and Development

notion, see Daniel M. Hausman & Brynn Welch, 'To Nudge or Not to Nudge' (2010) 18 Journal of Political Philosophy 123.

⁵ Teichman, D. & Zamir, E., 'Normative Aspects of Nudging in the International Sphere' (2021) 115 AJIL Unbound 263–267, at 263.

⁶ Caputo, A., 'A literature review of cognitive biases in negotiation processes' (2013) 24 International Journal of Conflict Management 374-398; Korobkin, R. & Guthrie, C., 'Heuristics and Biases at the Bargaining Table' (2004) Marquette Law Review 795-808.

⁷ For a difference of views between negotiators and their home state administration, see for trade law: Hoekman, B.M. & Wolfe, R., 'The Geneva effect: where officials sit influences where they stand on WTO priorities', EUI RSC, 2022/37, Global Governance Programme-471.
<<http://hdl.handle.net/1814/74557>>.

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(OECD),⁸ the European Union (EU),⁹ the World Bank,¹⁰ and the UN¹¹ and its agencies, such as the World Health Organization (WHO)¹² and the United Nations International Children's Emergency Fund (UNICEF).¹³ In 2017, the United Nations Environmental Programme (UNEP) issued a report on the use of behavioural insights for sustainable consumption with concrete examples from food, energy, water, transportation and mobility as well as waste¹⁴, and the OECD did so as well.¹⁵

The second category of actors pertains to the recipients of the behavioural intervention, which may include states and their respective governments at the national or local level, as well as businesses¹⁶ and consumers. On the international level, those can again be states, respectively their negotiators, e.g., when an international secretariat sets agendas or is involved in inter-state negotiations. For the negotiation of environmental treaties, such as the Paris Agreement, behavioural insights have been discussed.¹⁷ The High Level Advisory Board on Effective Multilateralism to UN Secretary General António Guterres is currently exploring behavioural insights for advancing tools on the international plane to create mechanisms for effective multilateral governance, especially for global public goods and commons.¹⁸ As pointed out by António

⁸ OECD, 'Behavioural insights', available at: <<https://www.oecd.org/gov/regulatory-policy/behavioural-insights.htm>>.

⁹ European Commission, 'Competence Centre on Behavioural Insights', available at: <https://knowledge4policy.ec.europa.eu/behavioural-insights_en>.

¹⁰ World Bank, 'The Mind, Behavior, and Development Unit' (eMBed), available at: <<https://www.worldbank.org/en/programs/embed>>.

¹¹ UN, 'The Secretary-General's Guidance Note on Behavioural Science', available at: <<https://www.un.org/en/content/behaviouralscience/>>.

¹² WHO, 'World Health Organization's Technical Advisory Group on Behavioural Insights and Sciences for Health', available at: <<https://www.who.int/our-work/science-division/behavioural-insights>>.

¹³ UNICEF, 'Bringing behavioural insights to scale in the United Nations', 10 Dec. 2018, available at: <<https://www.unicef.org/innovation/stories/behavioural-insights-UN>>.

¹⁴ UNEP, 'Consuming Differently, Consuming Sustainably: Behavioral Insights for Policymaking' (2017), updated version 2021.

¹⁵ OECD, 'Tackling Environmental Problems with the Help of Behavioural Insights' (2017). <<https://www.oecd.org/environment/tackling-environmental-problems-with-the-help-of-behavioural-insights-9789264273887-en.htm>>.

¹⁶ Mark Armstrong and Huck Steffen, 'Behavioral Economics as Applied to Firms: a Primer' (2010) 6 Competition Policy International 3; OECD, 'Behavioural Insights and Organisations' (2020) Fostering Safety Culture.

¹⁷ Schein, A. & Baynham-Herd, Z., 'What if a behavioural scientist redesigned climate negotiations?' The Behavioral Insights Team Blog, 28 July 2021, available at: <<https://www.bi.team/blogs/what-if-a-behavioural-scientist-redesigned-climate-negotiations/>>; Anne van Aaken & Jan-Philip Elm, 'Framing in and through International Law'. In: A. Bianchi & M. Hirsch (eds.), *International law's invisible frames – Social cognition and knowledge production in international legal processes* (Oxford University Press 2021), pp. 35-54; Barret, S. & Dannenberg, A., 'Sensitivity of Collective Action to Uncertainty about Climate Tipping Points' (2014) 4 Nature Climate Change 36-39; Garrison, J. A., 'Overcoming Obstacles in Global Climate Action from Copenhagen to Paris: Issue Framing as a Tool to Understand Opportunities for Policy Change', (2017), KFG Working Paper No. 81; Anne van Aaken, 'Behavioral Aspects of the International Law of Global Public Goods and Common Pool Resources' (2018) 112 American Journal of International Law 67.

¹⁸ See the website: <<https://highleveladvisoryboard.org/>>.

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Guterres, addressees can also be international organizations themselves, in the sense of using behavioural organizational insights for the internal functioning of the international organization and its employees.¹⁹

When contemplating the actors using behavioural insights and those targeted, the measures can take very different forms and can play out at different levels of regulation. On the international inter-state level,²⁰ behavioural insights can be used in treaties. Here, it can play out in two ways. First, behavioural insights can be in negotiation strategies (departing from rationalist negotiation theories). Or they can, secondly, use behavioural insights for the design of law-making, e.g., making use of default rules, based on insights concerning the *status quo* bias.²¹ Here, attention can be paid to the 'ground rules' for negotiation of particular disciplines, such as opt-ins\ -outs (such as with respect to dispute resolution). Research demonstrates that states will opt-in significantly less frequently than opting-out; yet this may influence the willingness to commit.²² Also compliance design can benefit from behavioural insights: e.g., they favour rewarding mechanisms more than a rational choice approach would.²³

Furthermore, the use of soft law can be considered and this is especially pertinent for using behavioural insights for achieving the SDGs. International soft law can be surprisingly useful and effective, despite the absence of enforcement mechanisms. This can be attributed to both, traditional rational choice explanations and to cognitive effects, such as *status quo* bias associated with 'default rules', the difficulty to discount soft rules as information, and anchoring effects associated with (legal) standards.²⁴ This has been also explored for the Paris Agreement's goal of keeping global temperature change below 2 degrees Celsius sets a psychologically powerful baseline against which future policy failures can be measured.²⁵

¹⁹ Guterres, A., n. 1 above. See Lori Foster, 'Applying behavioural insights to organisations: Theoretical underpinnings' (OECD Publication 2018); For example, there has been experimental research t conducted by Anne van Aaken, T. Broude, Ch. Engel and K. Luckner, Identifying Communities of Practice in International Law: An Experimental Study with Frontline Humanitarian Negotiators on the cognitive psychology of frontline humanitarian negotiators in collaboration with the Competence Center for Humanitarian Negotiations (CCHN), on file with the author. This should serve the CCHN to use those insights in the training of the humanitarian negotiators of several international organizations.

²⁰ For example, how behavioral insights can and are used between countries, see Teichman, D. & Zamir, E., 'Nudge Goes International' (2019) 30 *European Journal of International Law* 1263–1279.

²¹ Broude, T. & Moses, S., 'The Behavioral Dynamics of Positive and Negative Listing in Services Liberalization', in M. Roy & P. Sauvé (eds.), *Research Handbook on Trade in Services* (Edward Elgar, 2016), pp. 385–411.

²² Galbraith, J., n. 3 above.

²³ Ann van Aaken & Simsek, B., 'Rewarding in International Law' (2021) 115 *American Journal of International Law* 195–241.

²⁴ Broude, T. & Shereshevsky, Y., 'Explaining the Practical Purchase of Soft Law: Competing and Complementary Behavioral Hypotheses', in H. G. Cohen & T. Meyer (eds.), *International Law as Behavior* (Cambridge University Press, 2021), pp. 98–127.

²⁵ Arden Rowell and Josephine van Zeben, 'A New Status Quo? The Psychological Impact of the Paris Agreement on Climate Change' (2016) 7 *European Journal of Risk Regulation* 49.

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The WHO and its members have successfully utilized soft law based on behavioural insights in initiatives such as the WHO Guidelines on packaging and labelling of tobacco products. This was evident when the World Trade Organization (WTO) Appellate Body upheld a Dispute Settlement Panel's use of non-binding provisions of the Guidelines as evidence of emerging tobacco control practices on plain packaging, effectively turning soft law into hard law.²⁶ Plain packing laws are now found in many countries. Also, whether as hard or soft law, international norms can be drafted as 'floor or ceiling' provisions – either or both.²⁷ Minimum standards run the risk of being considered as anchors to which no further effort is required, and also leave open the problem of overly stringent regulation or otherwise costly conduct that can create externalities. Furthermore, UN Agencies can gather best practices from state and distribute them as an information device – this would be a bottom-up approach to international guidance on the use of behavioural insights.

On the national level, behavioural insights have been used for regulation in all areas of law (private and public) and many countries have behavioural insights units.²⁸ Sometimes they are inspired by international norms, but national regulatory practices may also in turn inspire international norms. They again can take different legal forms, such as formal laws, regulatory guidelines of national or sub-national agencies or just be regulatory practices – with different significance for their legitimacy and accountability towards the targeted actors. For example, nudging has been used to induce reduced energy consumption.²⁹

3. SCIENTIFIC AND NORMATIVE STOP SIGNS FOR BEHAVIOURAL INTERVENTIONS

Clearly, the use of behavioural insights is on the rise within international environmental law and policy.³⁰ Those insights are sometimes

²⁶ WTO, 'Australia – certain measures concerning trademarks, geographical indications and other plain packaging requirements applicable to tobacco products and packaging', WT/DS435/AB/R WT/DS441/AB/R, 9 June 2020, <https://www.wto.org/english/tratop_e/dispu_e/435_441abr_e.pdf>.

²⁷ Buzbee, W. W., 'Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction' (2007) 82 New York University Law Review 1547-1619.

²⁸ Cristiano Codagnone and others, 'Nudging in the World of International Policymaking' (2014) The Behavioral Economics Guide 51-8; Sunstein, C. R. & Reisch, L. A., 'Automatically Green: Behavioral Economics and Environmental Protection' (2014) 38 Harvard Environmental Law Review 127-158; Zamir, E. & Teichman, D., *Behavioral Law and Economics* (Oxford University Press, 2018); Sunstein, C. R. & Reisch, L. A., *Trusting Nudges. Toward A Bill of Rights for Nudging* (Routledge, 2019); and more specifically for environmental protection.

²⁹ Stefan Stieglitz, Milad Mirbabaie, Annika Deubel, Lea-Marie Braun, and Tobias Kissmer, 'The potential of digital nudging to bridge the gap between environmental attitude and behavior in the usage of smart home applications' (2023) 72 International Journal of Information Management 102665.

³⁰ On empirical evidence on "green nudging", see e.g. Aja Ropret Homar, and Ljubica Knežević Cvelbar, 'The effects of framing on environmental decisions: A systematic literature review' (2021) 183 Ecological Economics 106950. See also (n 15) on behavioral science as used by UNEP as well as UNEP, 'The little green book of nudges' (2021), available at: <<https://www.unep.org/resources/publication/little-book-green>>

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used through the regulatory tool of nudging, but they are not confined thereto. Given this development, there is a need to reconsider their scientific (3.1.) and normative limitations (3.2.) with a special view to distinctive scientific and normative challenges when applying behavioural science to international environmental law and policy within the SDG.

3.1. Scientific Stop Signs

The origins of insights of behavioural sciences in departures from rational choice assumptions derive from experimental or survey research in controlled circumstances, employed to observe (individual or collective) actors' cognition and real preferences and thus confer a high degree of internal validity to their findings.³¹ Many experiments show systematic digressions from rationality assumptions on cognitive and motivational grounds, with significant implications for international law. Yet, there is some caution to be introduced.

The external validity of experiments – the generalized applicability of implications beyond specific situations and outside of the laboratory – needs to be approached with caution.³² First, it is important to be mindful of the fact that people and societies are highly complex and learning systems. Most of the experiments are conducted in the West – in the United States and Europe, but their insights may be applied through behavioural policies of international organizations all over the world. For example, in health policy tools, but also for SDGs and environmental policy, such as by UNEP.³³ But unlike in natural sciences, where a stone always falls everywhere on earth due to gravity, behaviour may vary depending on factors such as different cultures.³⁴ A behavioural intervention working in the UK may not work in India; therefore, behavioural insights generated in one country can be transposed only with caution to others.

What do we know about the effectiveness of nudges? First, alleviating the external validity problems, ever more research is conducted in the field with Randomized Controlled Trials (RCTs).³⁵ Evidence is mixed.

nudges?_ga=2.185586473.1436719789.1714978356-293353169.1714978356> (accessed 6 May 2024).

³¹ Internal validity describes a trustworthy cause-and-effect relationship between a treatment and an outcome.

³² Dunoff, J. L. & Pollack, M. A., 'Experimenting with International Law' (2018) 28 *European Journal of International Law* 1317-1340.

³³ See supra n. **Error! Bookmark not defined.**

³⁴ Henrich, J., 'The WEIRDest People in the World: How the West Became Psychologically Peculiar and Particularly Prosperous' (Farrar, Straus and Giroux, 2020).

³⁵ A randomized controlled trial (RCT) is an experimental form of impact evaluation in which the population receiving the program or policy intervention is chosen at random from the eligible population, and a control group is also chosen at random from the same eligible population. This has been used, for example, by Nobel Prize winners for development economics: Banerjee, A. & Duflo, E., *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty* (Global Affairs, 2012).

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Sometimes, effectiveness of nudges could be shown.³⁶ But other studies indicated limited influences of nudging or even report backfiring effects with unintended consequences.³⁷ And of course, as has been lamented, ineffective behavioural studies are seldom reported.³⁸ One recent meta-studies find effects of behavioural interventions and reveals that “only 62% of nudging treatments are statistically significant”³⁹ – whether this is good or bad result lies in the eyes of the beholder. Another meta-study finds that nudges are most effective in the food sector but less effective for other sectors, such as the environment and that effectiveness varies across the type of nudge.⁴⁰

If behavioural interventions are proposed by the United Nations agencies, they should be applicable everywhere in the world. This should be less of a problem for universal cognitive biases, such as loss aversion, availability bias, or anchoring. But if there are interventions build on phenomena that are clearly social in nature (e.g., social comparisons, as often used in the environmental sphere,⁴¹ and other regarding behaviour), cultural differences may matter. To my knowledge there is no cross-country study evaluating specifically similar behavioural interventions in different countries or regions of the world taking into account cultural context. Used as a proxy here, one survey finds different attitudes towards a variety of nudges in Europe and the US “with a noteworthy division among nations: while majorities in both Denmark and Hungary are supportive of many nudges, citizens of those nations show significantly lower levels of receptivity to them than do citizens of France, Germany, Italy, and the United Kingdom.”⁴² It is plausible to expect that the effectiveness of behavioural interventions for people who reject certain behavioural interventions may be diminished and even counterproductive.

³⁶ The latest meta-study compares RCT in the US from two different nudging units. Stefano DellaVigna and Elizabeth Linos, 'RCTs to Scale: Comprehensive Evidence From Two Nudge Units' (2022) 90 *Econometrica* 81.

³⁷ Giovanna d'Adda, Valerio Capraro and Massimo Tavoni, 'Push, don't nudge: Behavioral spillovers and policy instruments' (2017) 154 *Economics Letters* 92.

³⁸ 'Nudges that don't nudge' (2020) 4 *Nature Human Behaviour* 121. For one example in the environmental field, see Sumit Agarwal and others, 'Water conservation through plumbing and nudging' (2022) 6 *Nature Human Behaviour* 858.

³⁹ Dennis Hummel and Alexander Maedche, 'How effective is nudging? A quantitative review on the effect sizes and limits of empirical nudging studies' (2019) 80 *Journal of Behavioral and Experimental Economics* 47. They find that most studies are conducted in the health context (38), followed by environment (19). The latter use social referencing most often.

⁴⁰ Stephanie Mertens and others, 'The effectiveness of nudging: A meta-analysis of choice architecture interventions across behavioral domains' (2022) 119 *Proceedings of the National Academy of Sciences (PNAS)* 11-10, at 7 “reveals substantial variations in the effectiveness of choice architecture as a behavior change tool.” They find that across behavioral domains, decision structure interventions that modify decision environments to address decision makers' limited capacity to evaluate and compare choice options are consistently more effective in changing behavior than decision information interventions that address decision makers' limited access to decision-relevant information or decision assistance interventions that address decision makers' limited attention and self-control.

⁴¹ See supra n. **Error! Bookmark not defined.**

⁴² Lucia A. Reisch and Cass R. Sunstein, 'Do Europeans like nudges?' (2016) 11 *Judgment and Decision Making* 310, at 311.

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Not all types of nudges are created equal and some have been shown to be more effective than others, e.g. default rules.⁴³ Furthermore, the same biases and heuristics may not be relevant for all application contexts. Environmental law and policy in the context of SDGs, be it on the national or international level present special psychological and behavioural challenges since it is also psychologically distinctive as argued by Rowell and Bilz,⁴⁴ and may make environmental applications of behavioural science thornier than non-environmental SDGs. The human brain is not well adapted to tackle complex and diffuse future phenomena. People neglect in their decisions diffuse consequences harming others. They also tend to neglect long-term consequences, e.g., using plastic (present bias⁴⁵). It is well known that the bigger the number of victims is, the less people will be affected by it – the phenomenon of psychic numbing on victims and costs.⁴⁶ Thus, cognitive biases may be aggravated since the consequences of one's behaviour are not well visible and abstract and victims of environmental degradation are barely visible or not yet born. It could also well be that in the environmental sphere different motivations kick in. Given that the concern of environmental policy is not the individual itself (as with health, e.g. altruistic) motivations may need to be activated and carefully so. Not only are social comparisons, often used to nudge people into action for contributing to a public good, such as the environment, less effective.⁴⁷ Some behavioural nudges may thus not work as well in the environmental sphere as in other applications.

Furthermore, internal validity of experiments has been questioned given the replication crisis in experimental research. It basically means that once an experiment is replicated, no statistical significant result is found. But does that necessarily imply a false positive result? It may be owed to the insights on external validity if subjects are different (e.g. from different cultures) in the replication studies rather than to the research design or outright cheating by researchers. Another plausible explanation is low statistical power in either the original study or single replication studies.⁴⁸

⁴³ Hummel and Maedche, 'How effective is nudging? A quantitative review on the effect sizes and limits of empirical nudging studies', Table 7.

⁴⁴ Arden Rowell and Kenworthy Bilz, *The Psychology of Environmental Law* (New York University Press 2021) at 29.

⁴⁵ The present bias refers to the tendency of people to give stronger weight to payoffs that are closer to the present time when considering trade-offs between two future moments. Ted O'Donoghue & Matthew Rabin, 'Doing It Now or Later', (1999) 89 *American Economic Review* 103-24).

⁴⁶ The phenomenon of "psychic numbing" is the indifference that sets in when we are confronted with overwhelming calamity, and it is only one of the glitches in our emotional makeup that keep us from working to change circumstances that harm other people. See Paul Slovic et al., 'Psychic numbing and mass atrocity' (2013) in Eldar Shafir (ed.), *Behavioral Foundations of Public Policy* 126; Paul Slovic, 'If I look at the mass I will never act': Psychic numbing and genocide', (2007) 2 (79) *Judgment and Decision Making* 79-95; Seyoung Lee & Thomas Hugh Feeley, 'The identifiable victim effect: a meta-analytic review', (2016) 11 (199) *Social Influence* 199-215.

⁴⁷ Hummel and Maedche, 'How effective is nudging? A quantitative review on the effect sizes and limits of empirical nudging studies', Table 7.

⁴⁸ Maxwell, S. E and others, 'Is Psychology Suffering from a Replication Crisis? What Does "Failure to Replicate" Really Mean?' (2015) 70 *American Psychologist* 487-498; Bohannon, J.,

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The awareness of the problem has already led to a worldwide endeavour to replicate and consolidate behavioural insights.⁴⁹ Since replication efforts are under way and pre-registration of experiments is happening more often,⁵⁰ this should help to confer reliability and precision of the results. Pre-registration would also diminish the positive results bias for publication which occurs when authors are more likely to submit, or editors are more likely to accept, positive results than negative or inconclusive results, even though the latter would also advance knowledge.

All those scientific stop signs need to be taken into account when using those insights in international law and they thus have to be used carefully. Thus, a few desiderata can be formulated: 1) if international actors rely on behavioural insights, well documented empirical and settled knowledge should guide them; 2) the context and actors where those insights are used have to be well defined and understood;⁵¹ 3) a possibility of exchange of good practices and knowledge about behavioural insights (including negative results) needs to be established – and to an extent this is beginning to take place in the innovation network of the UN in that in-house behavioural research is bundled in one unit.⁵² Furthermore, experimental research has to be further complemented as far as possible with other types of research if fitting the research question, e.g., RCTs – as far as this is ethically permissible – and other social science methods, such as network analysis⁵³ and agent-based modelling,⁵⁴ both of which are

‘About 40% of economics experiments fail replication survey: Compared with psychology, the replication rate “is rather good,” researchers say’, *Science*, 3 March 2016, available at: <<https://www.science.org/content/article/about-40-economics-experiments-fail-replication-survey>>.

⁴⁹ The Replication Network, ‘Furthering the Practice of Replication in Economics’, available at: <<https://replicationnetwork.com/tag/psychology/>>.

⁵⁰ Shrout, P. E. & Rodgers, J. L., ‘Psychology, Science, and Knowledge Construction: Broadening Perspectives from the Replication Crisis’ (2018) 69 *Annual Review of Psychology* 487-510.

⁵¹ That applied, e.g., for using behavioural insights for (international) organizations. Those are valued highly because of their alleged rationality in dealing with complex tasks and problems (see M. Michael Barnett and Martha Finnemore, *Rules for the World: International Organizations in Global Politics* (Cornell University Press 2004) 27 (Cornell University Press, 2012). It can be argued that one of the great advantages of these institutions is that their slow bureaucratic procedures and rigid rules can serve as a “rational” solution to cognitive biases, misperceptions, and mistaken beliefs of individual decision-makers (see, e.g., Jonathan Bendor and Thomas H. Hammond, ‘Rethinking Allison’s Models’ (1992) 86 *The American Political Science Review* 301-322. Others claim that the institutional design of certain international bureaucracies might arouse irrational behaviour (a classic example is over-optimism in financial forecasting by IOs, see Michele Fratianni and John Pattison, ‘The economics of international organizations’ (1982) 35 *Kyklos* 244-62).

⁵² UN Innovation Network, available at: <<https://www.uninnovation.network/>>. UN Innovation Network has set up the UN Behavioural Science Group, which comprises of more than 800 members from more than 40 UN Entities and 60 countries. The Group promotes awareness and supports behavioural science work at the UN; provides learning opportunities about behavioral sciences and methods and collaborates with academics in the behavioural sciences and organisations specialising in designing and implementing behaviourally-informed projects.

⁵³ Antonio M. Chiesi, ‘Network Analysis’ in James D. Wright (ed), *International Encyclopedia of the Social & Behavioral Sciences (Second Edition)* (Elsevier, 2015).

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research methods adapted to highly complex problems, such as the environment and can include behavioural sciences. All this would confer confidence and trust in the insights gained by experimental studies and behavioural research.

3.2. Normative Stop Signs

The use of behavioural insights for regulation, especially “nudging” and its normative implications have been extensively and controversially discussed in legal, philosophical and behavioural economic scholarship, but hitherto have been primarily confined to the national realm. What has been less discussed is the use of behavioral by international organizations (IOs). This needs special attention due to two reasons. First, IOs have a much broader reach and thus more people will be affected by their regulatory policies and tools. Second, the democratic legitimacy of IOs is diminished in comparison with national governments in general⁵⁵ and thus specifically also the legitimacy of the use of behavioral insights for regulation is not as strong as in the national realm. And “[t]he perception of legitimacy matters, because, in a democratic era, multilateral institutions will only thrive if they are viewed as legitimate by democratic publics.”⁵⁶ Although implementation of international policy mostly, but not exclusively, occurs at the domestic level, states may just follow international guidelines, as the EU has e.g. done with IOSCO Guidelines on rating agencies before the financial crisis of 2008.⁵⁷ The guidelines may thus exert a high influence on national regulators with less scrutiny by national regulators.

When considering international organizations as ‘nudgers’, two types of international nudges can be distinguished. The first and most common category is where states or individuals representing the state, that is, national regulators, are the targeted actors. Although research concerning this international organization-state or state-state dynamic is still in its infancy, insightful applications can be found.⁵⁸ Given that states are corporate entities, the vexing questions of autonomy, normative judgment, and moral agency are less palpable for states, although factual inequality between states (Global North and Global South) and their agents concerning knowledge of behavioural sciences can be a concern.⁵⁹ But this is

⁵⁴ Nigel Gilbert, Agent-based models 2-26 (2008); Maja Schlüter et al., *Agent Based Modelling*, in *The Routledge Handbook of Research Methods for Social-Ecological Systems* 383-398 (Reinette Biggs et al. eds., 2022).

⁵⁵ Jonas Tallberg and Michael Zürn, ‘The legitimacy and legitimation of international organizations: introduction and framework’ (2019) 14 *The Review of International Organizations* 581.

⁵⁶ Allen Buchanan and Robert O. Keohane, ‘The Legitimacy of Global Governance Institutions’ (2006) 20 *Ethics & International Affairs* 405, at 407.

⁵⁷ Directive 2003/71/EC of the European Parliament and of the Council of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading and amending Directive 2001/34/EC. It dynamically referenced the soft law standards of IOSCO.

⁵⁸ See Doron Teichman and Eyal Zamir, ‘Nudge Goes International’ (2020) 30 *European Journal of International Law* 1263-79.

⁵⁹ As here, Doron Teichman & Eyal Zamir, n. 33 above, at 266, considering the infringements of sovereignty.

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more a problem of training and knowledge about behavioural sciences where either international organizations can initiate capacity building for states, that is, their negotiators, diplomats or regulators.⁶⁰ If behavioural sciences are used within international organizations for their employees, there is no special normative problem in training them for using behavioural insights in their daily work. If it is targeting the employees as employees, similar problems to the ones discussed below for consumers can arise though but those do not differ from the same issues as in private organizations.

The second category considers “ordinary citizens” as targeted actors. Although well discussed in the national realm in the “nudge” discussion, it has gotten only cursory attention in the international realm. Like their national counterparts, international “nudges” are not less immune to controversy, and as such they also raise normative questions about legitimacy and morality.⁶¹ In the following, I will thus concentrate on those.

Not all behavioural interventions or nudges are created equal. Both, goals and means of a behavioural insight need to be distinguished for a normative assessment. What matters most for normative limits to nudging is first different goals pursued, that is, the distinction between behavioural interventions which target the well-being of the individual alone (so-called paternalistic nudges) and those which target behaviour concerning externalities (in the economic sense), e.g., interventions to reduce (dirty) energy consumption. If the only intent of the measure is to reduce third party externalities, protect the public or promote public welfare, paternalism is not involved, as in most environmental policies. If third parties or public goods are to be protected, no special justification is necessary (together with the provision of public goods, making such allocative choices constitutes a core prerogative of states, being assisted by international organizations). Both type of goals are found in the SDGs –those targeting the wellbeing of the individual, such as hunger (SDG 2) and health (SDG 3) as well as climate action (SDG 13). Some goals surely have both, the individual wellbeing as well externalities as a target – the delimitations can be fluid. Still, whereas the former has to be used with great caution,⁶² the latter should in principle be

⁶⁰ For a proposal concerning the United Nations Convention against Corruption, see Anne van Aaken, *Effectuating International Law against Corruption: Behavioral Insights*, 22/2 *International Journal of Constitutional Law* (forthcoming 2024).

⁶¹ The literature is legion. Instead of many, see Colin Camerer and others, ‘Regulation for Conservatives: Behavioral Economics and the Case for “Asymmetric Paternalism”’ (2003) 151 *University of Pennsylvania Law Review* 1211; Jeffrey J. Rachlinski, ‘The Uncertain Psychological Case for Paternalism’ (2003) 97 *Northwestern University Law Review* 1165; Mark D. White, *The Manipulation of Choice. Ethics and Libertarian Paternalism* (Palgrave Macmillan 2013); Anne van Aaken, ‘Judge the Nudge: In Search of the Legal Limits of Paternalistic Nudging in the EU’ in Alberto Alemanno and Anne Lise Sibony (eds), *Nudge and the Law A European Perspective* (Hart Publishing 2015).

⁶² Anne van Aaken, ‘Constitutional Limits to Nudging: A Proportionality Assessment’, in A. Kemmerer et al. (eds.), *Choice Architecture in Democracies: Exploring the Legitimacy of Nudging* (Hart and Nomos, 2017), pp. 199-235; McCrudden, C. & King, J., ‘The Dark Side of Nudging: The Ethics, Political Economy, and Law of Libertarian Paternalism’, in *ibid*, pp. 67-132, at 74, 104–10.

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permitted for furthering the common good and the SDGs promoting it, such as environmental protection.

Also the means of behavioural interventions differ widely. Whereas some of them are transparent and thus unproblematic, others are hidden and sometimes manipulative, since they exploit people's cognitive limitations rather than engage them as deliberative, autonomous, and rational agents. They are playing on subconscious or emotional levels of decision-making. For example, a classical nudge is informing people about other people's energy consumption to spur them to reduce theirs using social comparison. People tend to judge their position in relation to the positions of others and this is a powerful driver of behaviour. Two problems arise here – the first is the play with powerful emotional drivers of people, the second concerns the framing of the information. Does this information, e.g., need to be truthful to achieve results? And of course (including well intended) manipulations are possible, e.g., on local and time range of consumers to be counted in the benchmark of energy consumption. Who is able to control the information used in a nudge and how can the nudging actors be made accountable? The UN Refugee Agency (UNHCR) is experimenting with different communications targeted at a small group of influential people to induce empathy and change attitudes towards refugees as well as induce donations.⁶³ While there is no information on the concrete actions taken, as laudable as the goal is, the means may be manipulative and, thus, potentially not proportional. Whereas a similar problem arises on the national sphere, it is aggravated on the international one given that democratic legitimacy is missing, and accountability standards are far fewer than in the national realm where, ultimately, the use of behavioural sciences can be controlled by courts.

Drawing an analogy to liberal constitutions, one may argue that all regulation targeting individual freedom of decision-making needs to be proportional. This includes scrutinizing the goal of the behavioural intervention as discussed above, namely whether the goal is legitimately targeting externalities or whether it is paternalistic. When the suitability of the behavioural intervention is considered, all the scientific stop signs discussed above on internal and external validity are relevant, in particular, the effectiveness of the interventions and the context. It also needs to be considered if the intervention is necessary or if there are other, better suited means. This also implies a comparison of different types of behavioural interventions. Finally, a sort of proportionality *stricto sensu* should be applied: is invisible manipulation (no matter what goal of intervention is) really indispensable as a regulatory instrument of international governance?

⁶³ UNHCR Innovation Service, *Essays from the Edge of Humanitarian Intervention* (2018), at 51.

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4. CONCLUSION

It is high time that behavioural sciences enter the international sphere. Behavioural insights are needed to better achieve the SDGs – without a thorough understanding of human behavior, policies to achieve them can fail. Behavioral approaches depart from the rationalist model of human behaviour which has underpinned much of the construction of international law as well as the functioning and policies of international organizations. There is ample evidence which suggests that individuals are complex creatures. Although they still act strategically and pursue their goals, they do so often only with bounded rationality and often not entirely self-regarding. Thus, the behavioural approach can complement the rationalist approach but not discard it. Furthermore, individuals do not act in isolation and thus social cognition and cognitive and social psychology need to be added to understand the complexity of human behaviour better.

Given that behavioural approaches are gaining ground internationally and as a regulatory method of international organizations, awareness about scientific and normative stop signs needs to be raised – and behavioural sciences alone are no panacea to achieve the SDGs. Strategic interests will continue to play an important role, the long-term consequences on autonomy and deliberation need to be considered just as the implications for the institutions of liberal democracies as well as the values underpinning the international system. We need to move ahead with caution and be aware of the current limits of knowledge in behavioural sciences as well as of the normative implications of their use.

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AUTHOR'S DECLARATION AND ESSENTIAL ETHICAL COMPLIANCES

Author's Contributions (in accordance with ICMJE criteria for authorship)

This article is 100% contributed by the sole author. S/he conceived and designed the research or analysis, collected the data, contributed to data analysis & interpretation, wrote the article, performed critical revision of the article/paper, edited the article, and supervised and administered the field work.

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The author(s) solemnly declare(s) that this research has not involved any human subject (body or organs) for experimentation. It was not a clinical research. The contexts of human population/participation were only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of Helsinki Declaration does not apply in cases of this study or written work.

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The author(s) solemnly declare(s) that this research has not involved any animal subject (body or organs) for experimentation. The research was not based on laboratory experiment involving any kind animal. The contexts of animals not even indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of ARRIVE does not apply in cases of this study or written work.

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The author(s) solemnly declare(s) that this research has not directly involved any local community participants or respondents belonging to non-Indigenous peoples. Neither this study involved any child in any form directly. The contexts of different humans, people, populations, men/women/children and ethnic people are only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or prior informed consent (PIC) of the respondents or Self-Declaration in this regard does not apply in cases of this study or written work.

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The author(s) has/have NOT complied with PRISMA standards. It is not relevant in case of this study or written work.

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